

consideration of the noted dependent claims in the Office Action of May 13, 2004, is acknowledged, with appreciation.

The Section 102 rejection of Claims 1-5, 10, 13-14, 20, 25-26 and 28-31 over Reed (U.S. Patent No. 6,492,143), is traversed. The Section 102 rejection of Claims 6-8 over Reed "as defined by" Dal Monte et al (Chemical Senses, 1993, 18 (6): 713-721), is traversed. The Section 103 rejection of Claims 11-12, 15-19, 22-24 over Reed in view of Hoffman (U.S. Patent No. 5,998,588), is traversed. The Section 103 rejection of claim 27 over Reed in view of Gold (U.S. Patent No. 6,242,246), is traversed.

Reconsideration and withdrawal of the rejections are requested in view of the following distinguishing remarks.

The Examiner is requested to review the applicants Remarks with regard to Reed in the Amendment filed September 13, 2004.

The applicants believe that the outstanding rejections are based on the Examiner's belief that Reed describes a cell comprising a biological sensing element which is immobilized by virtue of the cells being immobilized wherein the sensing element comprises a detectable label.

The applicants have previously noted to the Examiner their belief that the biological sensing element in Reed is the whole cell, which is distinct from the presently claimed invention, whereas the Examiner is understood to believe that the sensing element is an olfactory receptor translated from a nucleic acid from the nucleic acid library and expressed within a cell. The detectable label identified by the Examiner is presumably the rhodopsin tag discussed in column 33 of Reed.

On a theoretical basis, if one were to proceed on the basis of the Examiner's interpretation of Reed, as the applicants understand it, the applicants submit there are at least the following distinctions between the disclosure of Reed and the presently claimed invention:

1. Claim 1 requires "a detector array".

The method of Reed is a functional ligand-binding assay (column 32, lines 50-51). According to commonly accepted definitions of "array" (such as the attached from <http://education.yahoo.com/reference/dictionary/entry/array>), this is an orderly arrangement of items. This requirement is not satisfied by the method of Reed which requires the transfected cells to be suspended in solution and tested by perfusion with appropriate test solutions (column 33, line 40).

2. Claim 1 requires the array to comprise one or more groups of sensing elements and variants thereof.

There is no indication in Reed of the arrangement of either the expressed olfactory receptors or the cells (when interpreted as the biological sensing elements) to be comprised within groups.

3. Claim 1 requires the groups to consist of biological sensing elements and variants thereof.

If the Examiner disagrees with point 2, above, it is pointed out that there is no discussion of variants of expressed olfactory receptors in Reed. In fact, if the aim of Reed is to determine whether a specific ligand binds to a specific receptor/sensing element expressed in the cell, the only way that assay would work is if all biological sensing elements are the same. If a cell expressed more than one biological sensing element there is no provision in Reed for determining which of those sensing elements allows binding of the ligand. If the cells within a specific assay run express more than one different sensing element, there is no provision in Reed for determining which receptor:ligand binding is causing the change in physiologic activity (measured as per col 5). Therefore, Reed does not describe groups consisting of biological sensing elements and variants thereof.

4. Claim 1 requires the biological sensing elements and variants thereof to be discretely immobilized onto or within a solid support.

The Examiner is understood to believe that the expressed olfactory receptor (i.e., the biological sensing element in the Examiner's interpretation) is immobilized by virtue of being contained within an immobilized cell. The applicants believe it is more likely than not that the cell is not immobilized. Reed described in column 33, lines 28-51, that the cells are in fact in a free flow chamber: “.. a glass coverslip with FURA-2 loaded HEK-293 cells was introduced into an open topped, longitudinal microperfusion chamber ..”. No means for immobilization are taught and it is apparent from this section

of Reed that the assay is performed on the cells as they sit in the flow of the medium running through the chamber. Thus, even if it is accepted (which it is not) that the sensing element of Reed is immobilized by virtue of being comprised in an immobilized cell, it is pointed out that the cell is in fact likely not immobilized but is comprised within a flow of liquid.

5. Claim 1 requires the biological sensing elements and variants thereof to be discretely immobilized onto or within a solid support.

The sensing element itself is discretely immobilized and likewise the variants. The sensing element is not contained within another receptacle which is then immobilized - to the contrary the sensing element itself, and likewise the variants, must be immobilized directly. The description of the application supports this interpretation. Reed as interpreted by the Examiner describes the immobilization of cells containing the sensing element. This is not the same as is claimed in this respect in the present application.

Withdrawal of the outstanding rejections is requested.

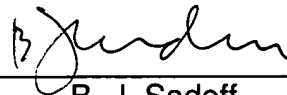
The claims are submitted to be in condition for allowance and a Notice to that effect is requested. The Examiner is requested to contact the undersigned in the event anything further is required in this regard.

CASS "et al"  
Appl. No. 10/055,367  
October 13, 2004

Respectfully submitted,

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**ar-ray**  (ə-ṙā') [KEY](#)
**TRANSITIVE VERB:**
**ar-rayed , ar-ray-ing , ar-rays**

1. To set out for display or use; place in an orderly arrangement: *arrayed the whole regiment on the parade ground.*
2. To dress in finery; adorn.

**NOUN:**

1. An orderly, often imposing arrangement: *an array of royal jewels.*
2. An impressively large number, as of persons or objects: *an array of heavily armed troops; an array of spare parts.* See Synonyms at [display](#).
3. Splendid attire; finery.
4. [Mathematics](#)
  - a. A rectangular arrangement of quantities in rows and columns, as in a matrix.
  - b. Numerical data linearly ordered by magnitude.
5. [Computer Science](#) An arrangement of memory elements in one or more planes.

**ETYMOLOGY:**

Middle English arraien, from Anglo-Norman arraiier, from Vulgar Latin \*arrēdāre; see reidh- in Indo-European roots

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